DOCUMENT RESUME

ED 124 095 HE 007 928

AUTHOR Edwards, K. Anthony
TITLE Self-Managed Studying in College Courses.
PUB DATE [75]
NOTE 22p.; Not available in hard copy due to marginal legibility of original document

EDRS PRICE MF-$0.83 Plus Postage. HC Not Available from EDRS.
DESCRIPTORS Behavior Change; College Curriculum; *Contingency Management; *Higher Education; Individual Development; Program Descriptions; Psychology; *Self Control; Student Behavior; Student Motivation; *Student Projects; Student Research; *Study Habits
IDENTIFIERS *Premack Principle; *Stimulus Control

ABSTRACT

In an introductory psychology course, students were taught some principles of "adjustment" using self-management techniques and were required to conduct a self-management project. The four student projects reported herein were specifically designed to improve study skills through use of Premack's principle and stimulus control. Course materials varied according to the student's choice of subject matter in which to improve the quality of work. Two students worked on the coursework in a class within which these projects were required: one read in her American literature class, and one studied electrical engineering material. Reports. from the students indicated success in achieving the desired terminal behavior (increased study skills). (Author/JT)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED124095

SELF-MANAGED STUDYING IN COLLEGE COURSES

K. Anthony Edwards

Division of Education and Psychology
Minot State College

Minot, North Dakota
58701

HE007988

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Abstract

In introductory psychology courses, students were taught some principles of "adjustment" using self-management techniques. The four student projects reported herein were specifically designed to improve study skills through the use of Premack's principle and stimulus control. The course materials varied according to the student's choice of subject matter in which to improve the quality of work. Two students worked on the coursework in a class within which these projects were required, one student read in her American literature class, and one student studied electrical engineering material. Reports from the students indicated success in achieving the desired terminal behavior, increased studying skills, and students additionally recognized that the principles of self-management similarly apply to the management of the behavior of others as well.

Self-Managed Studying in College Courses

During the period between the beginning of the fall term of 1970 and the end of the spring term of 1972, a large share of the student's work in a "personalized" introductory psychology course taught at Utah State University involved the conduct of a self-management laboratory project in a problem of his or her choice (Edwards and Powers, in press; Edwards and Gravis, 1973). Students enrolled in my classes entitled "The Dynamics of Adjustive Behavior and Mental Health" at Minot State College are currently at work conducting similar self-control projects as laboratory exercises.

As in most personalized courses, students who have previously taken the course and succeeded in it have helped to advise students with their projects. Students assisting in advising other students are given credit in special problems or, at Utah State University, teacher-training practicum credits were given.

Students are encouraged to devise their own methods for self-monitoring and self-managing some behavior they have chosen to increase or improve in or to decrease or remove. Of course, hand-outs and text materials are used as resources as well as consultation with the instructor and assistants. The major objectives of these projects have been to provide students with practical laboratory experience in relation with the text materials, to allow students to make direct experimental contact with the principles taught, and to insure the use of those principles in problem-solving after the class is finished.

Several students produced projects using Premack's principle and the principle of stimulus control (Homme, deBaca, Devine, Steinhorst, and Rickert, 1963; Premack, 1959). These papers were selected from the studying papers performed during the spring term of 1972 at Utah State University. The purpose of this paper is to present the results of the laboratory projects performed by four studying papers which used the principles of Premack's and stimulus control.

Project I

The purpose of the first project was that of increasing studying and developing evenly-paced studying. The material was often only skimmed and the student was consequently caught by pop quizzes. He was inadequately prepared and his grades suffered. He hoped to establish the behavior of reading the material at the end of each day and re-reading it just before class. The desired outcome was increased pages read and increased understanding of the material read.

Method

Subject, Apparatus, and Procedures

LLK was a 20-yr old college junior with a major in plant science. A small pocket notebook was used to collect the data at the time it occured. He recorded the data on forms provided in the laboratory section of the class. Studying was done at home or on campus at "The Briar". He chose to manipulate his interactions with the respective

environments where studying was attempted because studying in the library was distasteful to him and he had been successful occasionally in both environments.

During the first two weeks, the operant level of studying was recorded and distractions and interruptions observed. Six problems were located: Briar - (1) getting up for coffee, (2) talking to friends, (3) noise from the music and ventilation; Home - (4) wife, (5) daughter, and (6) television. To control these problems, a combination of Premack's principle and the principle of stimulus control were utilized. Reinforcement and work contingencies are listed in Table 1 illustrating the use of Premack's principle.

Table 1

Earnings and payment schedule for studying and breaks from studying.

Earnings	Behavior
One poker chip	Every 10 minutes of studying
Fifteen chips	Two hours uninterrupted studying
Five chips	Each completed assignment

Payments	Behavior
Two poker chips	One cup of coffee
Six chips	Ten minutes free time talking
Six chips	Ten minutes free time

Stimulus control was used when the student eliminated the noise of music, fans, and friends in the Briar and when he removed himself from the distractions of television, his wife, and his daughter at home. At the Briar, he selected a table which was secluded from the others. There was no fan or speaker near and friends were unlikely to notice his presence. "Messing around" at the table was forbidden. At home, a room in the basement was fixed up and used exclusively for studying. The self-modification program was begun at the beginning of the third week of the project and was continued for 7 weeks including baseline. At the beginning of the sixth week, the value of the tokens was reduced by half. Longer periods at the Briar were required and later hours at home were used to cut out some of the distractions which remained.

Results

Figure 1 shows an increase in the number of pages read each day. Reading each day and reviewing the material just before each class period was also increased. Baseline sessions showed wide variation for pages read from none to 27. During the intervention sessions, a gradual increase in the pages read and a tendency toward stability occured. On day 16 when stimulus control applications began along with the initiation of the token payoff for the scheduled behaviors, further increases in stability were seen. On day 26, when the token payoffs were reduced in value, and on day 30 when tokens were removed, stull furhter indications of control over studying were seen. Other

benefits which are not shown on the graph were the increase in quiz scores to nearly 100% and more of the material seemed to be retained.

Insert Figure 1 about here

Project II

The second project was that of difficulty with prolonged concentration while studying. Study periods usually included frequent self-interruptions by eating, talking, looking around, daydreaming, and walking around. Even further poor study behavior was likely reinforced by these interruptions. This student's grades had been fairly good in the past, therefore there had been little reason to change the disruptive behaviors. Interrupting studying less frequently, however, would allow more studying in a shorter period of time. The student would then have more free time to engage in pleasurable activities. The purpose of this student's project was to reduce the occurrence of non-studying behavior during study periods in order to maximize the production of other reinforcers as well.

Method

Subject and Apparatus

CW was a 24-yr old female who was in the third quarter of her junior year. She planned to teach secondary English. Through high school, a B+ average was maintained but her average had dropped to a B- in college. No previous training in controlling study habits had been done because

she had not been concerned with the problem previously. In effect, she had not had an opportunity to engage in supervised self-control projects until this one. The wall clock in the library was used to time the study periods. Pages read during the study sessions were counted and recorded on graphs.

Procedure

During the first two weeks, baseline behavior was established by recording the pages read per hour for all studying. A single subject area, American literature, was selected to measure during the intervention period. Optional light reading was selected as an activity to serve as a reinforcer. She studied for an hour beginning at 8:30 a.m. in the library and she studied short stories, poetry, and essays for an upper division literature course. For the first three weeks of intervention, 5-min of light reading from the Student Life (campus newspaper), House Beautiful, or House and Garden was allowed after 15-min of concentrated study. For the last two weeks, 5-min light reading was allowed after 30-min of concentrated study.

Results and Discussion

There was a large variation in the baseline rate from day to day as shown in Figure 2. The average number of pages per hour during baseline was 12. During the modification period, the average rose to 19 pages per hour. The average reading rate on days during which studying occurred was about 36 pages per hour. The trend was toward increased pages per hour reading rates during the last three weeks of the project.

Insert Figure 2 about here

Project III

The third project was considered by the student as an opportunity to improve a facet of his behavior that he had previously given little thought. He stated that he had "always disliked studying and I have, as far back as I can remember, put my lessons off until the last possible minute. In this experiment I was required to study, and I suppose it is the best choice I could have made as a subject." The purpose of this project was to increase the number of pages read per hour of studying, or, that is, increase the studying rate in terms of pages per hour.

Method

Subject, Apparatus, and Procedures

RAL was 22 years old, married, and a junior in college. He majored in business administration. He worked on a dairy farm owned by his father-in-law which prevented as much time in study as he would have liked. A watch was used to time the study period and a data sheet was supplied on which to record the pages read per hour during each session. Studying was first measured during a two week baseline period when nothing else was done to modify study behavior. After the second week, "cokes" were used as a reinforcer for completion of a study period. Premack's principle was used in this study by making coke-drinking

(a high probability behavior) contingent upon completing a study period (a low probability behavior). Also used was the principle of stimulus control in which the student locked himself in the spare bedroom of his mobile home during the study sessions.

Results

Figure 1 shows the rate of reading increased from a baseline average of 19.4 pages per hour to a rate of 31.6 pages per hour. The student was also able to maintain the high rate after three weeks of intervention without the use of cokes as a reinforcer.

Insert Figure 3 about here

Project IV

In the words of this student, "Perhaps it was the winter quarter 'blahs' or the senior year 'dulldrom' that was affecting me; either way, my study habits were getting worse. For example, I often found myself day-dreaming when I was studying." These kinds of behaviors are not productive in retention or efficient use of study time, therefore this student used studying as the project exercise to try to increase the frequency of study sessions. Rate of studying in pages per hour was also recorded.

Method

Subject and Apparatus

TAH was a male 22-yr old electrical engineering student in his senior year of college. The apparatus used included a wrist watch and

a data sheet. The beginning and ending time of the study sessions and the number of pages read were recorded.

Procedures

The first 10 days of the study served as the baseline sessions. Since studying occurred on only 8 of those days, only 8 sessions are recorded. During this period, reading in all courses was recorded. After baseline it was decided to watch only the study rates for two classes: communications theory and switching theory. These were selected because they were similar and in order to obtain data for more than one class. The time period from 9:00 to 10:00 p.m. was selected during which study rates were recorded. The student drank a can of Mountain Dew each evening before bed, so it was decided to use Premack's principle where the can of pop was used to reinforce the study session. Only sessions on days during which studying occurred were recorded.

Results and Discussion

As seen in Figure 4, the average studying rate increased substantially during intervention sessions in comparison with the baseline sessions. The rate of studying thus increased indicated the success of Premack's principle. It should be noted that the student's sessions decreased during intervention compared with baseline, but as in many studying projects, after efficiency improved by sessions, the number of sessions decreased. After the project was concluded, the student noted that his studying rates had begun declining. This further indicated to him that the reinforcer chosen served as a reinforcer.

Insert Figure 4 about here

Critical Review

In Project I, LLK commented that the number of pages read per hour, or the reading rate, was not the best measure. Why is the rate not the best measure? What might have been better measures? The student also noted that studying before and after classes had increased, and that studying in his stimulus-controlled envirnment had increased. His grades on quizzes had also increased. Since grades are what is most important to a student, perhaps test scores should have been measured among the events manipulated or varied. Stimulus control, time spent studying, pages and material studied, and the programmed consequences of studying (reinforcement magnitude and frequency of delivery) may have been the events controlled in order to determine which of these were important to this particular student. The important dependent variable in this case was grades on quizzes. The suspected causes for the poor grades probably should have been manipulated along with obtaining grade data.

The purpose CW stated for her project was to increase the amount of studying completed during the sessions in which studying took place. The student's purpose was achieved. Sessions during which studying occurred showed increased pages read per hour and less variation across sessions. The student neglected to note whether the ligh reading was allowed only after concentrated study. This is an important

issue; if the reinforcer is allowed at times other than those specified, it is likely that it would not last long as a reinforcer.

Retention was stated important to TAH as a product of his project, yet he failed to measure it. He could have included it as a measure of the effectiveness of the reinforcer by writing a multiple-choice question after each "unit" was completed (he would need to self-define a unit). After each week, each 5 hours of study, or each 30 pages of material, for example, he could take a test over the material. He would have then been able to measure retention in addition to the number of pages read per hour. The number of interruptions seemed to be troublesome as well and should have been counted. Different results may have obtained if the number of interruptions were counted along with pages per hour.

Reinforcing a study session is one of the necessary conditions for effecting the use of efficient study habits, according to Fox (1962). However, it is probably not sufficient to do so without other changes. The other two conditions include stimulus control and small steps. Stimulus control includes the removal of distractions from the study environment. RAL did this in his study, however, use of small steps was ignored. Two important characteristics were lacking in this project: (1) the student was unclear what it was that he was studying, and (2) it was not clear how the student measured the differences between material gathered in one course from the other.

The studies reported here lacked the quality of professional reports

with respect to detailed information found, for example, in the Journal of the Experimental Analysis of Behavior, however the major goals were achieved. Students reported self-observational data and did so with indications of a higher order of skill than could have been previously demonstrated. Thus, it is presumed that a link has been achieved by these and other students involved in self-control projects in the Greek dictum, "Know thyself".

According to Skinner (1971), learning self-control skills is necessary for the survival of society. In fact, learning self-control may be a necessary first step for the gaining of creative skills. Of course, if self-control skills were learned well by all individuals, the survival of society would involve many changes by comparison with its current state of affairs. This paper offered only four examples of one kind of self-control projects which students in my classes have performed or are now performing. Other project classes in self-control include the reduction of cigarette-smoking, obesity, irrational fears, piano-practice, saying nice things, and tooth-brushing. The projects have even included more exotic topics such as "flipping-the-bird" and germ-consciousness. The projects are exciting to both the instructor and the students. It is exciting to watch the students gain enthusiasm and interest in self-control. One added "plum" is that many students indicated that they recognize that these same principles apply when used with the modification of others as well as with themselves.

Footnote

1. All students who helped with these projects are thanked. Especially deserving are Scott Bowles, Jim Powell, Kirk Bowden, and Gordon Liddle who did their best during the frequent absences of the instructor.

References

Edwards, K. A., and Gravis, C. G. The reduction of lies: an exercise in self-management. The Worm Runner's Digest, 1973, 15 (1), 56-57.

Edwards, K. A., and Powers, R. B. Self-management in a beginning psychology course as a laboratory exercise. The New Scholar, in press.

Fox, L. Effecting the use of efficient study habits. Journal of Mathetics, 1962, 1, 75-86.

Homme, L. E., deBaca, P. C., Devine, J. V., Steinhorst, R., and Rickert, E. J. Use of the Premack principle in controlling the behavior of nursery school children. Journal of the Experimental Analysis of Behavior, 1963, 6, 544.

Premack, D. Toward empirical behavior laws: I. Positive reinforcement. Psychological Review, 1959, 66, 219-233.

Skinner, B. F. Beyond freedom and dignity. New York: Knopf, 1971.

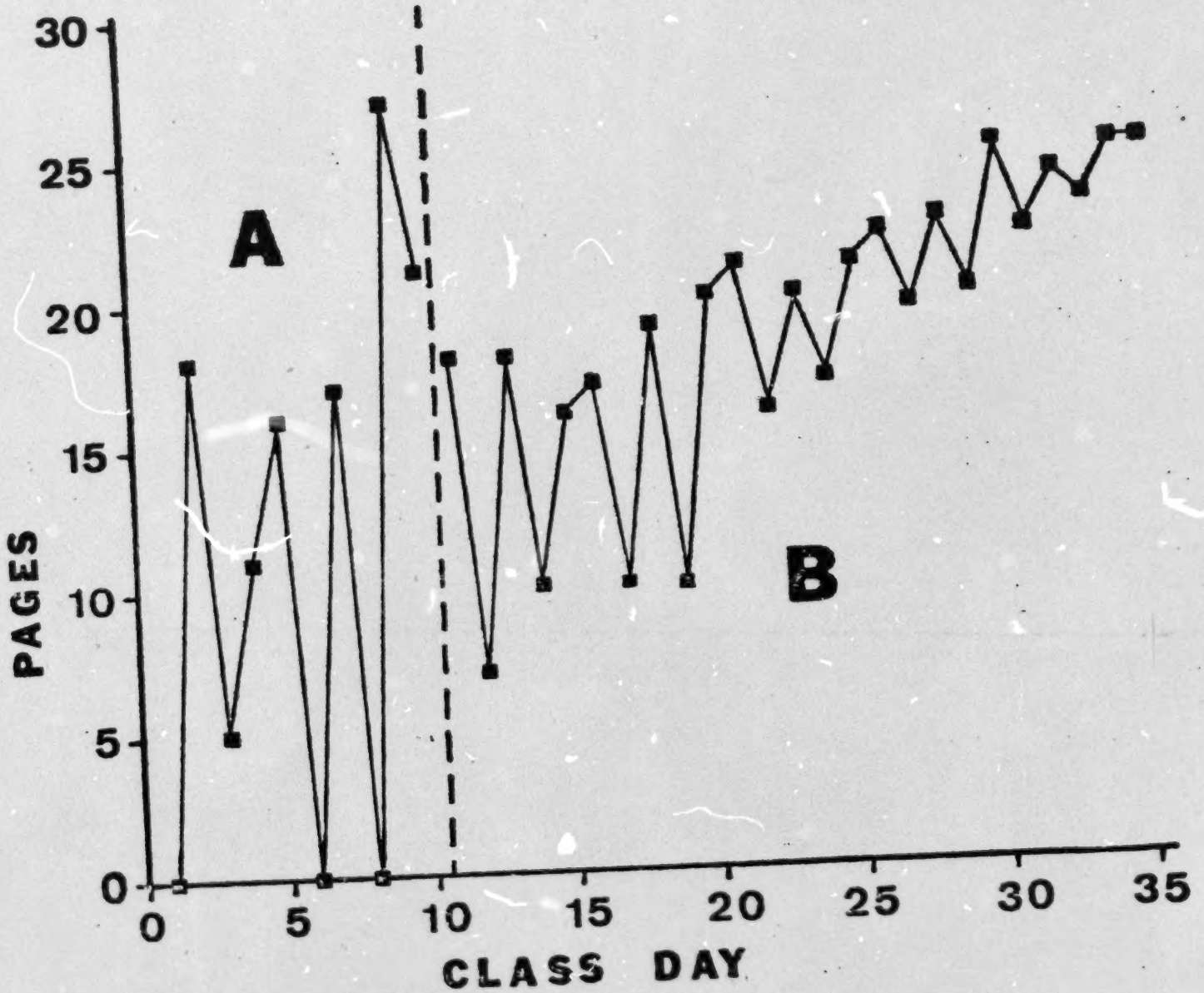
Figure Captions

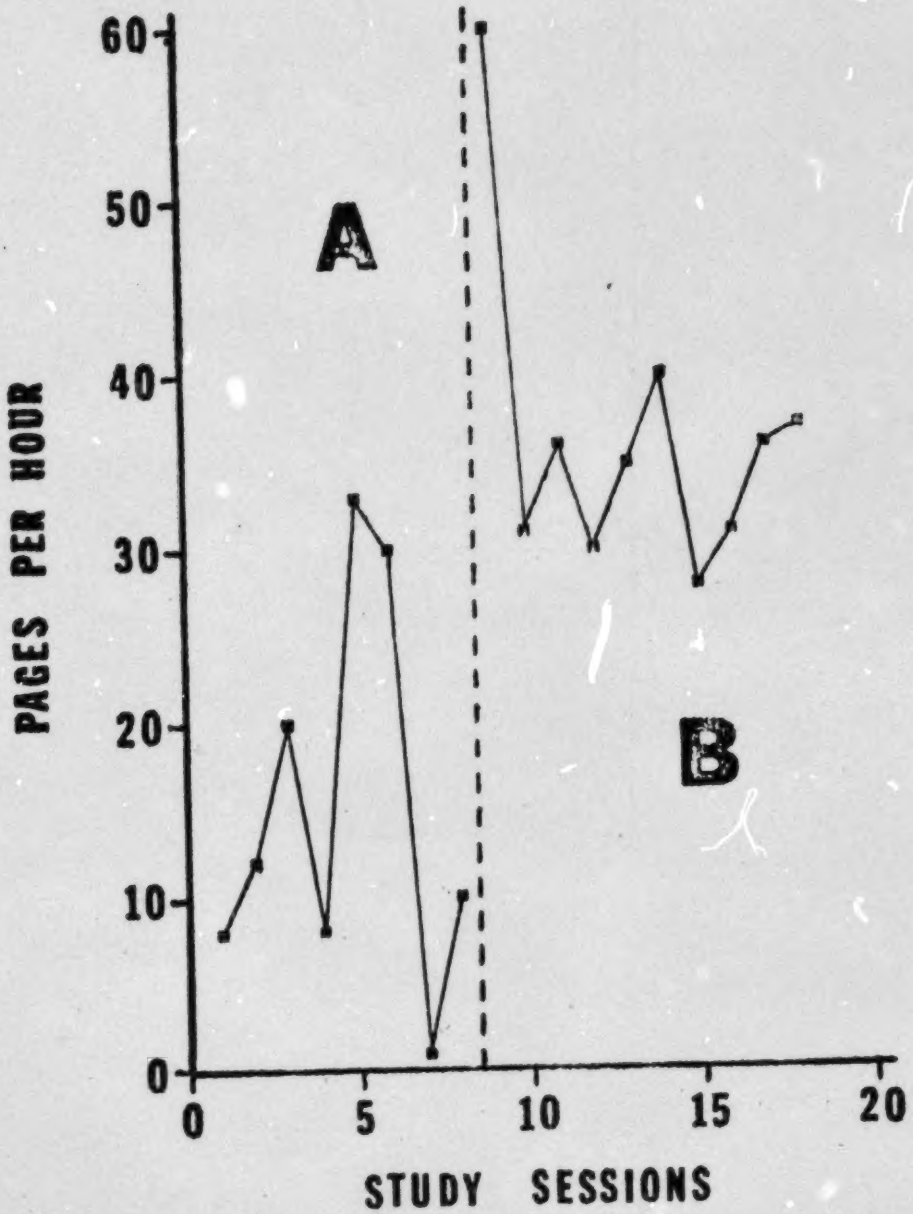
Figure 1. Pages read during each class day of a self-management project to increase reading rates in study sessions. Section A indicates baseline sessions; section B indicates the intervention sessions. (LLK)

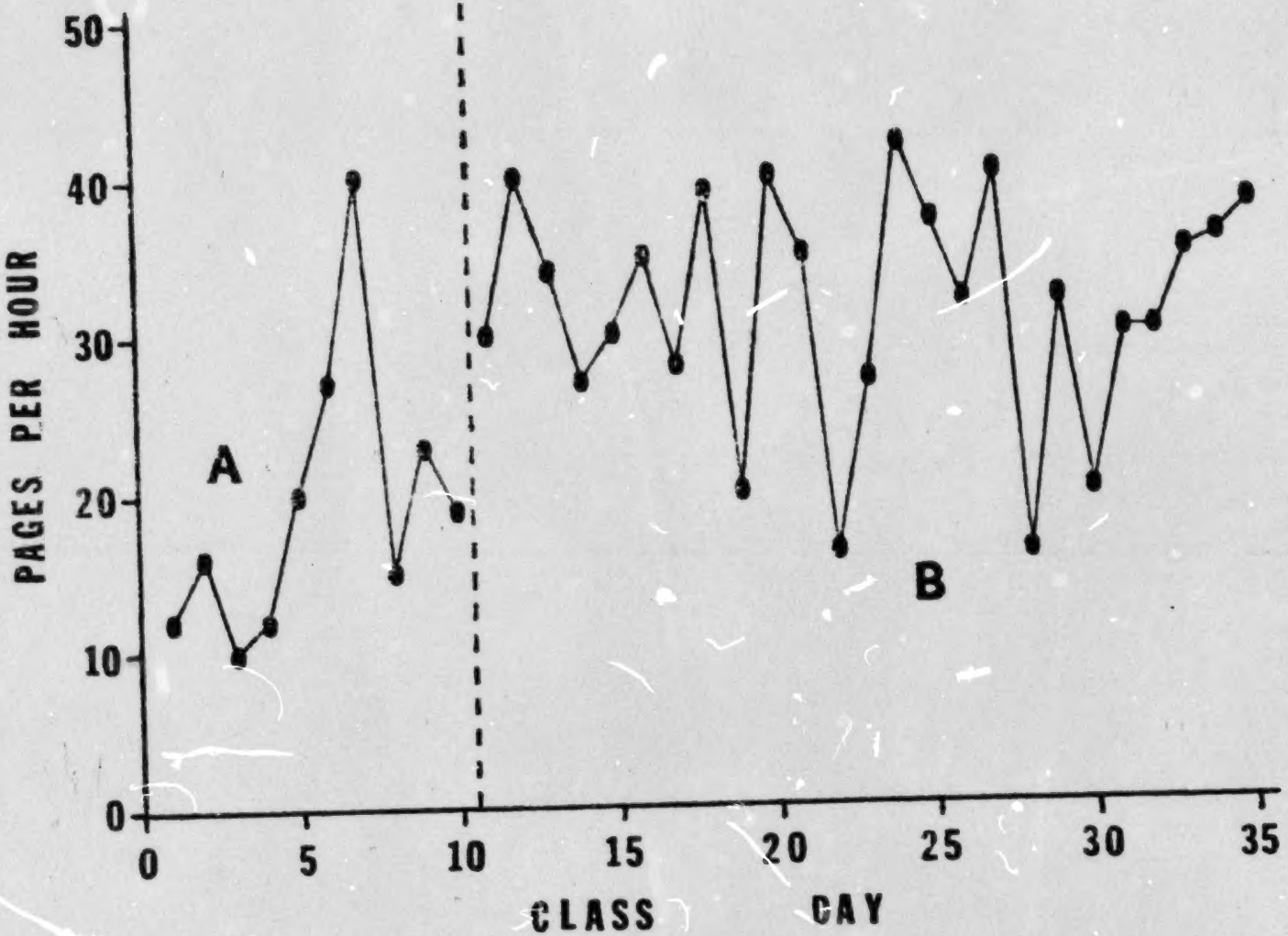
2. Pages per hour rate of reading performance during study sessions in a self-management studying project designed to increase efficient rates of reading. Panel A represents baseline; Panel B represents intervention sessions. (CW)

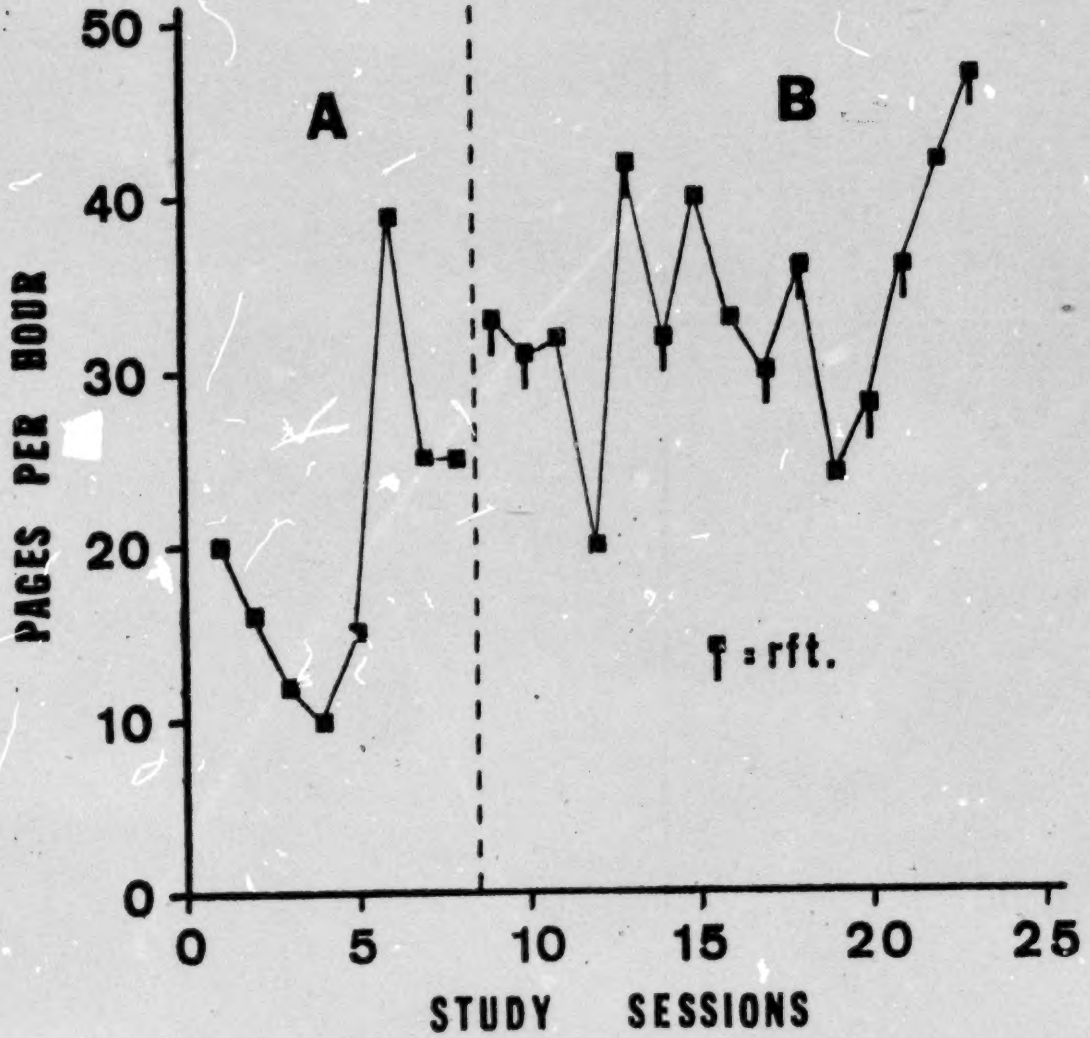
3. Pages read per hour rate of reading during each class day of a self-management project designed to increase reading rates. Panel A shows baseline data; Panel B shows intervention data. (RAL)

4. Pages per hour reading rates during study sessions for which intermittent reinforcement followed sessions during which studying occurred. Panel A shows baseline data; Panel B shows intervention data. (TAH)


30
25
20
15
10
5
0
PAGES
A
B
0
5
10
15
20
25
30
35
CLASS DAY


60
50
40
30
20
10
0
A
B
PAGES PER HOUR
0
5
10
15
20
STUDY SESSIONS


PAGES PER HOUR
50
40
30
20
10
0
A
B
0
5
10
15
20
25
30
35
CLASS DAY


50
40
30
20
10
0
PAGES PER HOUR
A
B
T = rft.
0
5
10
15
20
25
STUDY SESSIONS